

Attorney Docket No. **IMMR004/01US**

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Lonny L. CHU

Examiner: Unassigned

Serial No.: Unassigned

Confirmation No.: Unassigned

Filed: Herewith

For: SOUND DATA OUTPUT AND MANIPULATION USING HAPTIC FEEDBACK

U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, Mail Stop Patent Application
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - a statement as specified in 37 C.F.R. §1.97(e).
- In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. § 1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- Check No. __ in the amount of \$__ for the total fee is attached.
- A return receipt postcard is also enclosed.
- Please charge \$__ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: February 20, 2004

Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

By:

Respectfully submitted,
COOLEY GODWARD LLP



Christopher R. Hutter
Reg. No. 41,087

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Lonny L. CHU

Serial No.: Unassigned

Examiner: TBD

Confirmation No.: Unassigned

Art Unit: TBD

Filed: Herewith

For: **SOUND DATA OUTPUT AND MANIPULATION USING HAPTIC FEEDBACK**

U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, Mail Stop Patent Application
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 is enclosed.
- No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. 09/975,320 to which the above-identified application claims priority under 35 U.S.C. §120.
- No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- Publication(s) ____ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ____ application serial no. and mailed on ____.
- Enclosed is a copy of a non-English publication(s) _____. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.

- Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- Enclosed is a copy of pending patent Application Serial No. ____.

This Information Disclosure Statement is filed within any one of the following time periods:

- within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- before the mailing date of a first office action on the merits; or
- before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

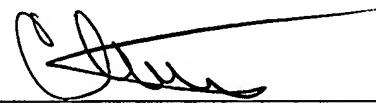
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: February 20, 2004

Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

Respectfully submitted,
COOLEY GODWARD LLP

By:



Christopher R. Hutter
Reg. No. 41,087

<p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>				<i>Complete if Known</i>	
				Application Number	Unassigned
				Filing Date	February 20, 2004
				First Named Inventor	Lonny L. CHU
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
Sheet	1	of	4	Attorney Docket Number	IMMR-004/01US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
	A1	6,300,936		Braun et al.	10/09/2001
	A2	6,292,170		Chang et al.	09/18/2001
	A3	6,285,351		Chang et al.	09/04/2001
	A4	6,252,583		Braun et al.	06/26/2001
	A5	6,219,034		Elbing et al.	04/17/2001
	A6	6,198,206		Saarmaa et al.	03/06/2001
	A7	6,161,126		Wies et al.	12/12/2000
	A8	6,131,097		Peurach et al.	10/10/2000
	A9	6,088,017		Tremblay et al.	07/11/2000
	A10	6,005,551		Osborne et al.	12/21/1999
	A11	5,984,880		Lander et al.	11/16/1999
	A12	5,959,613		Rosenberg et al.	09/28/1999
	A13	5,889,672		Schuler et al.	03/30/1999
	A14	5,857,986		Moriyasu	01/12/1999
	A15	5,844,392		Peurach et al.	12/01/1998
	A16	5,816,823		Naimark et al.	10/06/1998
	A17	5,795,228		Trumbull et al.	08/18/1998
	A18	5,785,630		Bobick, et al.	07/28/1998
	A19	5,767,457		Gerpheide et al.	06/16/1998
	A20	5,766,016		Sinclair et al.	06/16/1998
	A21	5,684,722		Thorner et al.	11/04/1997
	A22	5,669,818		Thorner et al.	09/23/1997
	A23	5,619,180		Massimino et al.	04/08/1997
	A24	5,565,840		Thorner et al.	10/15/1996
	A25	5,547,382		Yamasaki et al.	08/20/1996
	A26	5,466,213		Hogan et al.	11/14/1995
	A27	5,405,152		Katanics et al.	04/11/1995
	A28	5,399,091		Mitsumoto	03/21/1995
	A29	5,388,992		Franklin et al.	02/14/1995
	A30	5,334,027		Wherlock	08/02/1994
	A31	5,309,140		Everett, Jr., et al.	05/03/1994
	A32	5,299,810		Pierce et al.	04/05/1994
	A33	5,275,174		Cook	01/04/1994
	A34	5,271,290		Fischer	12/21/1993
	A35	5,240,417		Smithson et al.	08/31/1993
	A36	5,212,473		Louis	05/18/1993
	A37	5,203,563		Loper, III	04/20/1993
	A38	5,189,355		Larkins et al.	02/23/1993
	A39	5,186,629		Rohen	02/16/1993
	A40	5,078,152		Bond et al.	01/07/1992
	A41	5,038,089		Szakaly	08/06/1991
	A42	5,035,242		Franklin et al.	07/30/1991

¹ Unique citation designation number.² See attached Kinds of U.S. Patent Documents.

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	Unassigned
Sheet	2	of	4	Filing Date	February 20, 2004
				First Named Inventor	Lonny L. CHU
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR-004/01US

A43	5,022,407		Horch et al.	06/11/1991
A44	5,019,761		Kraft	05/28/1991
A45	4,937,685		Barker et al.	06/26/1990
A46	4,934,694		McIntosh	06/19/1990
A47	4,930,770		Baker	06/05/1990
A48	4,891,764		McIntosh	01/02/1990
A49	4,794,392		Selinko	12/27/1988
A50	4,713,007		Alban	12/15/1987
A51	4,708,656		de Vries et al.	11/24/1987
A52	4,599,070		Hladky et al.	07/08/1986
A53	4,581,491		Boothroyd	04/08/1986
A54	4,513,235		Acklam et al.	04/23/1985
A55	4,236,325		Hall et al.	12/02/1980
A56	4,160,508		Salisbury, Jr.	07/10/1979
A57	3,911,416		Feder	10/07/1975
A58	3,903,614		Diamond et al.	09/09/1975
A59	3,902,687		Hightower	09/02/1975
A60	3,623,064		Kagan	11/23/1971
A61	3,517,446		Corlyon et al.	06/30/1970
A62	3,497,668		Hirsch	02/24/1970
A63	3,220,121		Culter	11/30/1965
A64	3,157,853		Hirsch	11/17/1964

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office ¹	Number ²	Kind Code ³ (if known)		
B1		0 349 086	A1	Stork Kwant B.V.	01/03/1990	
B2		WO 95/02233		Cybernet Systems Corp.	01/19/1995	
B3		WO 02/27705			04/04/2002	

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁴ Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	Unassigned
				Filing Date	February 20, 2004
				First Named Inventor	Lonny L. Chu
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
Sheet	3		4	Attorney Docket Number	IMMR-004/01US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	C1	Baigrie, "Electric Control Loading – A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990			
	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993			
	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90			
	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985			
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990			
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," <i>1993 IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993			
	C7	Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989			
	C8	Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990			
	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90			
	C10	Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993			
	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992			
	C12	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337			
	C13	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992			
	C14	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992			
	C15	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemannipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993			
	C16	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990			
	C17	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90			
	C18	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980			
	C19	Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISM-IFTOMM</i> , Sep. 8-12, 1981			
	C20	McAffee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL 1988</i> , JPL D-5172			
	C21	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95			
	C22	Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference & Exposition</i> , Hollywood, Florida, May 21-23, 1991			
	C23	Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemannipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30- Oct. 1, 1992			
	C24	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990			
	C25	Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference</i> , University of New Hampshire, March 10-11, 1988			
	C26	Howe, "A Force-Relating Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992			

Examiner Signature		Date Considered
--------------------	--	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	Unassigned
Sheet	4		4	Filing Date	February 20, 2004
				First Named Inventor	Lonny L. Chu
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR-004/01US

C27	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	
C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
C29	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
C30	Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop, JSC</i> , Houston, TX, July 25-27, 1989	
C31	Ohhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
C32	Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
C33	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	
C34	Gillespie, B., "The Touchback Keyboard," Proc. of Int'l Computer Music Conf., October 1992, pp. 447-448	
C35	Gillespie, B., "The Virtual Piano Action: Design and Implementation," Proc. of Int'l Computer Music Conf. September 1994, pp. 167-170	
C36	Snibbe, S. et al., "Haptic Techniques for Media Control," Proc. of 14 th Annual Symp. On User Interface Software and Technology, UIST 2001, November 2001, pp. 1-10	
C37	MacLean K. et al., "An Architecture for Haptic Control of Media," Proc. of ASME Dynamic Systems and Control Division, Haptic Interfaces for Virtual Environments and Teleoperator Systems, 1999, pp. 1-10	
C38	O'Modhrain, M., "Playing by Feel: Incorporating Haptic Feedback into Computer-Based Musical Instruments," Dissertation, Dept. of Music, Stanford University, November 2000, pp. 1-107	

196514 v1/RE
47MQ01!.DOC

¹ Unique citation designation number.

² Applicant is to place a check mark here if English language Translation attached.

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.